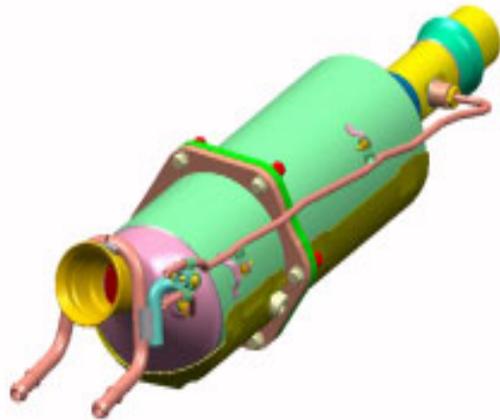


DIESEL PARTICULATE FILTER: A SUCCESS FOR FAURECIA EXHAUST SYSTEMS



Robert Parmann, Emmanuel Jean, Eric Quemere

Faurecia Exhaust Systems

DPF Experience in Europe by Faurecia

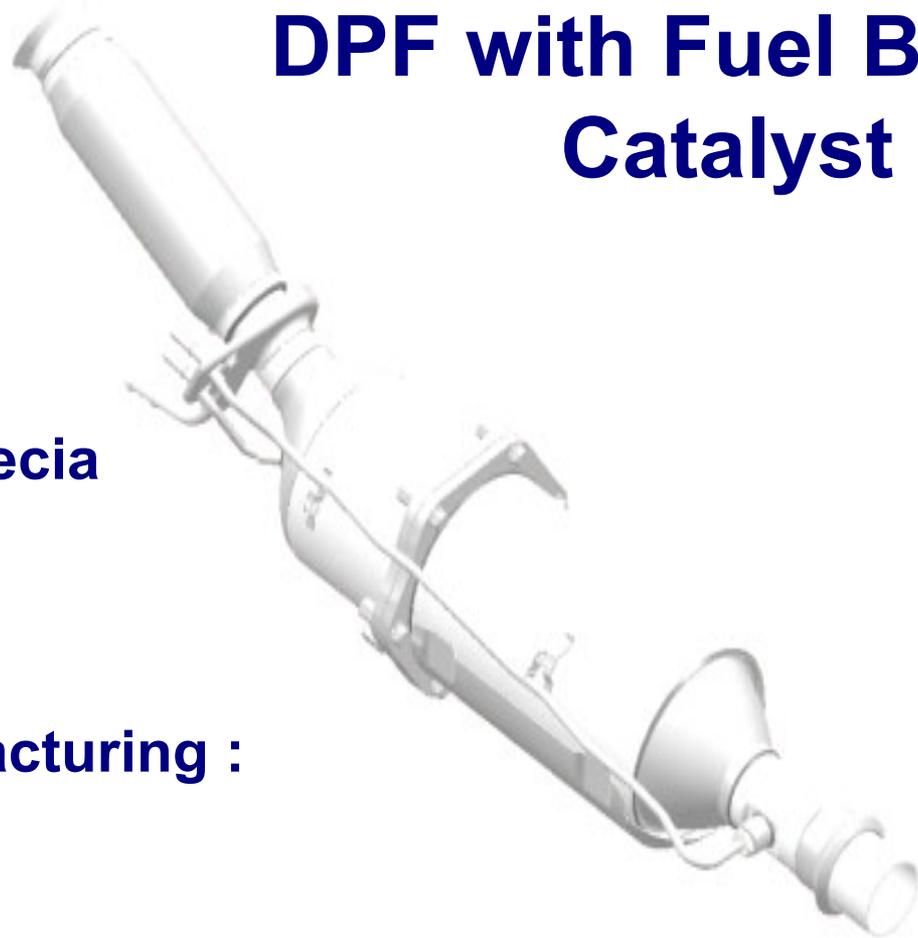
DPF with Fuel Borne Catalyst

Exhaust system : Faurecia

Filtration : Ibidem

Regeneration : Rhodia

**Cleaning and remanufacturing :
Faurecia**



DPF : large success for Faurecia Exhaust Systems

1995 : First Research on DPF by Faurecia

1998 : System development for Peugeot

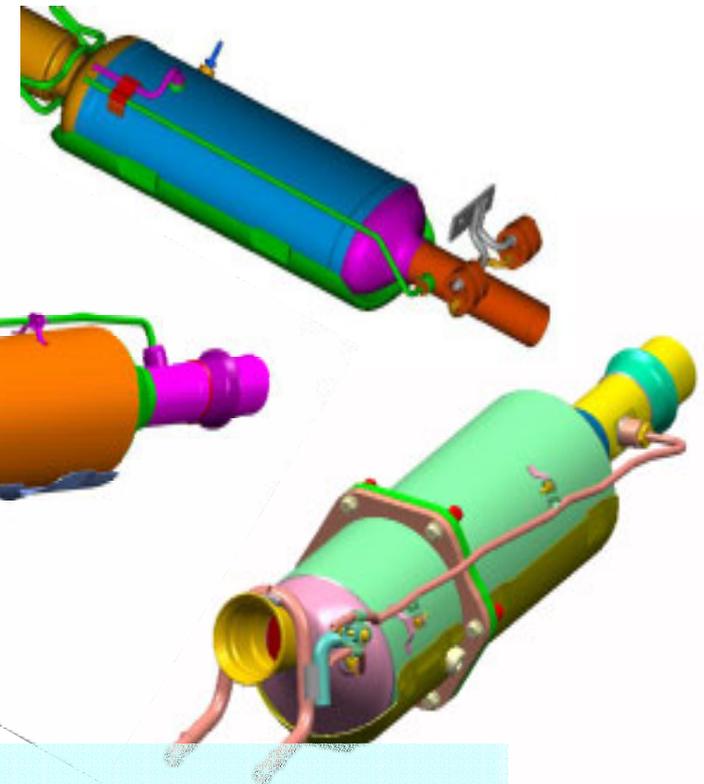
607

2000 : SOP Peugeot 607 DPF

2001 : SOP Peugeot 307 DPF

2002 : Start of remanufacturing facility

2003 : SOP planned with new customers



- Since 3 years : 500 000 DPF already produced

 - ☞ Faurecia market share : 70%

- In 2003 : More than 2 000 parts already cleaned by Faurecia

DPF with FBC* : an efficient and reliable system

System configuration

- Exhaust Systems by Faurecia
- Regeneration with Eolys™ fuel-borne catalyst by Rhodia
- Filtration on SiC Filter by Ibiden
- Cleaning & remanufacturing by Faurecia

Technical Key points

- FBC to lower the temperature of soot combustion process
- Fresh nano-crystal catalyst is continuously delivered in the soot
- Homogeneous Catalyst dispersion that favors diffusion of soot combustion process to the entire soot layer
- Fast, complete and safe DPF regeneration
- No sulfur sensitivity
- Cleaning : 120 000 km with the 2nd Eolys™ generation
- Target : to achieve 250 000 km

DPF with Coated Filter : a concept in development

System configuration

- Exhaust Systems by Faurecia
- Regeneration assisted by coating
- Filtration on SiC Filter by Ibiden

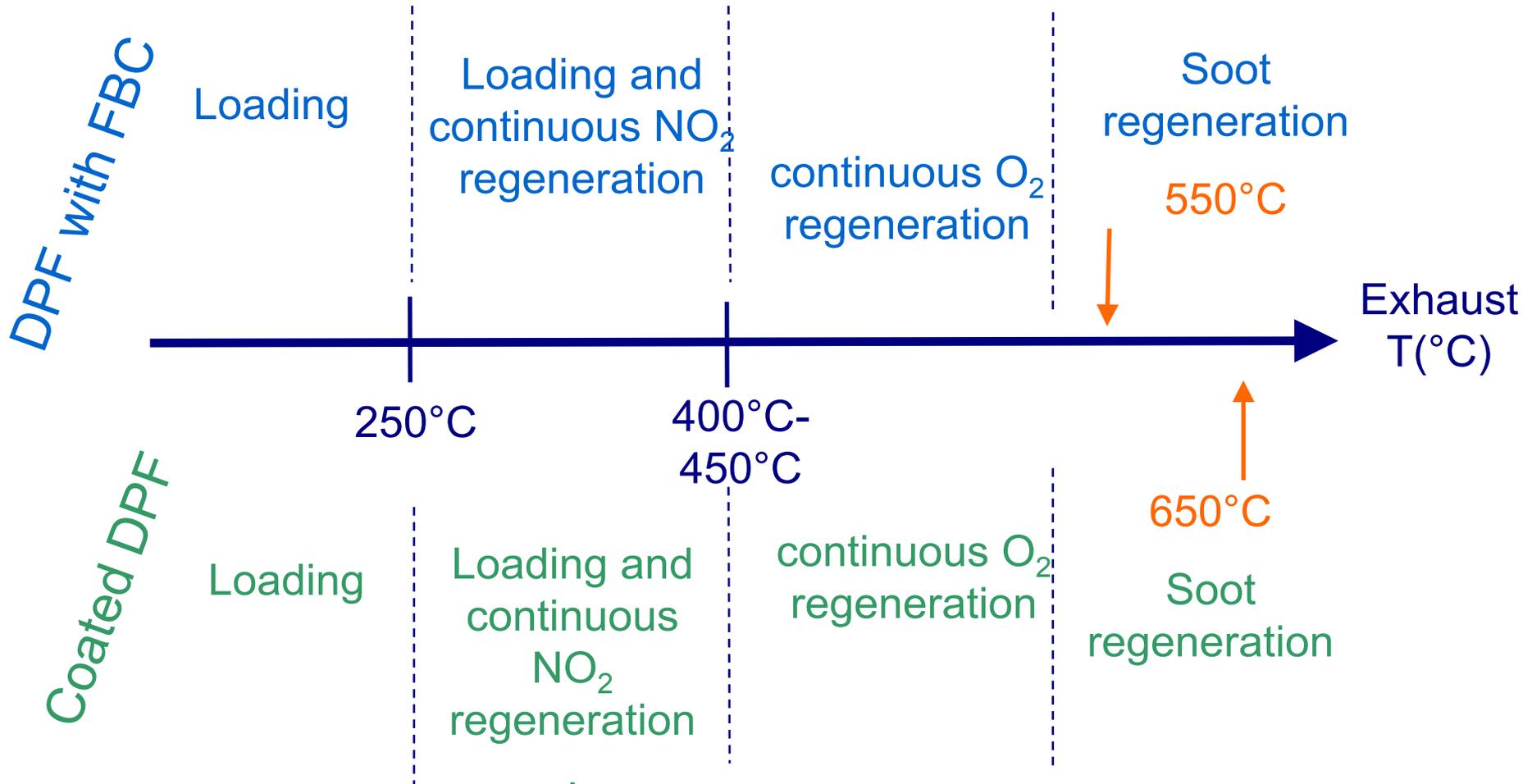
Technical Key Points

- PGM coating on filter to
 - accelerate soot oxidation
 - lower oxidation temperature
 - promote NO₂-oxidation
- Possible High dependence on sulfur level
- Low kinetic with low thermal gradients

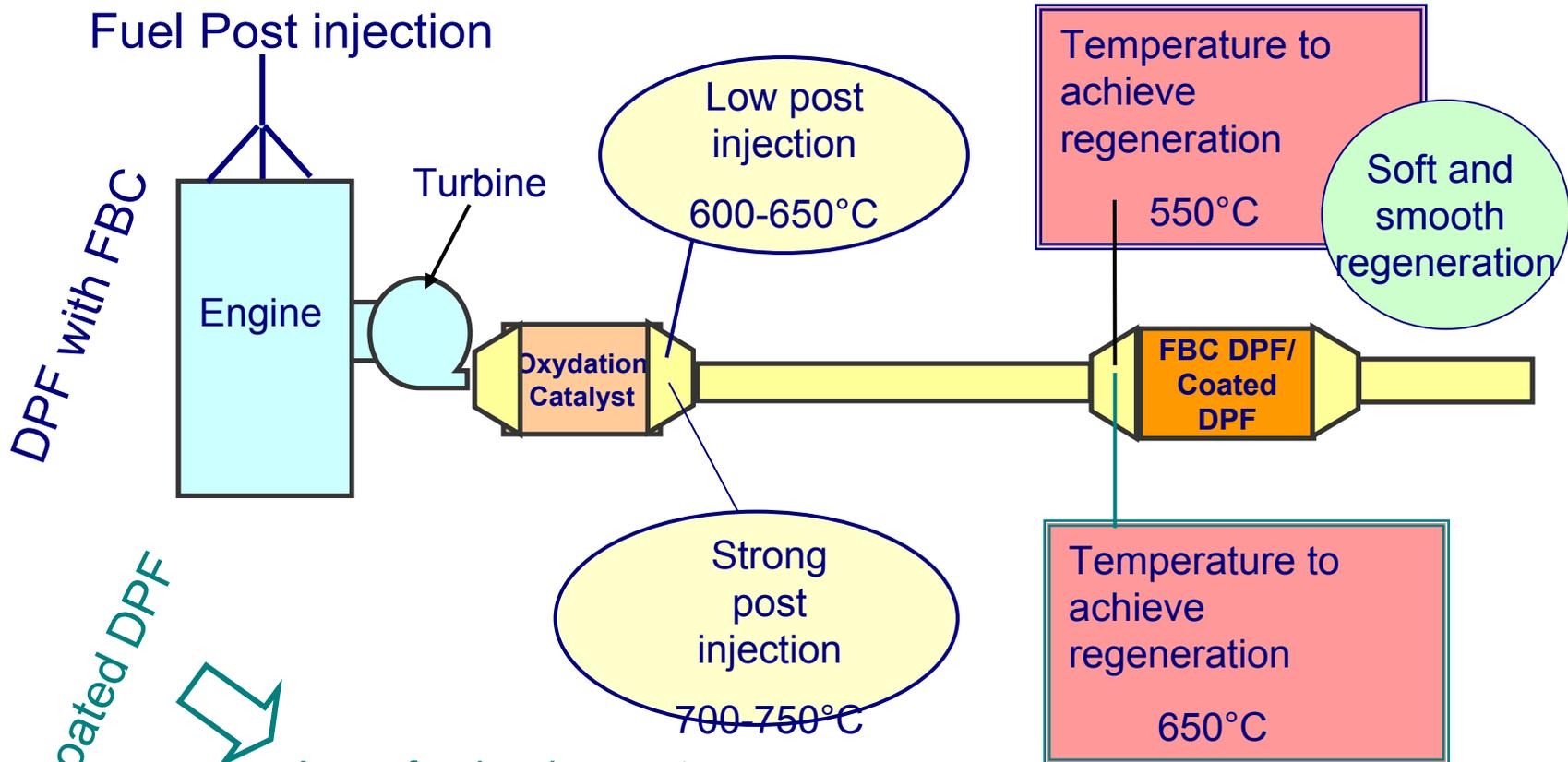
Key Points to be solved

- Regeneration in city cycle ?
- Durability ?
- Cleaning and Remanufacturing ?

DPF with FBC or Coated DPF regeneration temperature



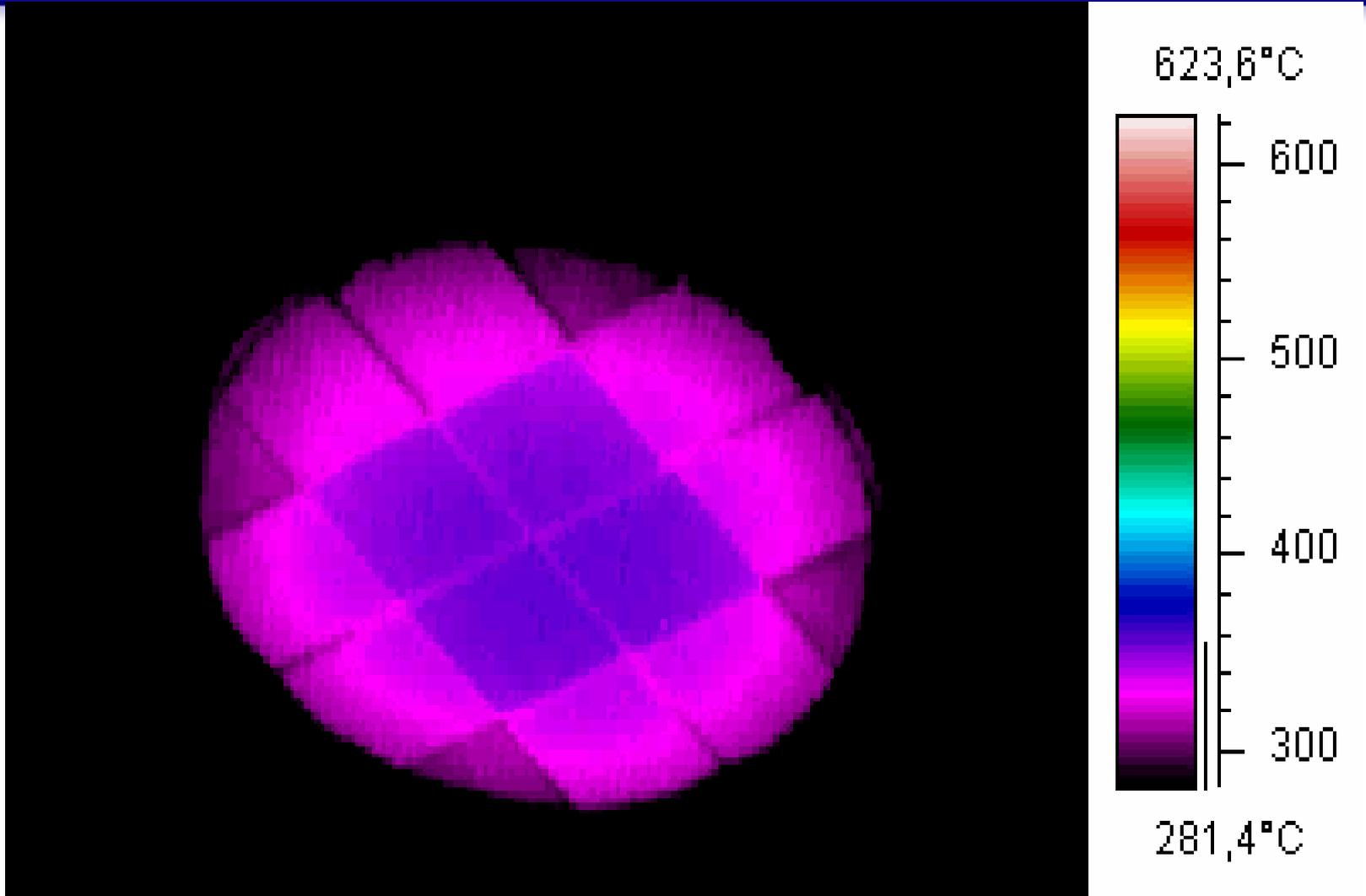
System DPF: a global system where thermal management is critical



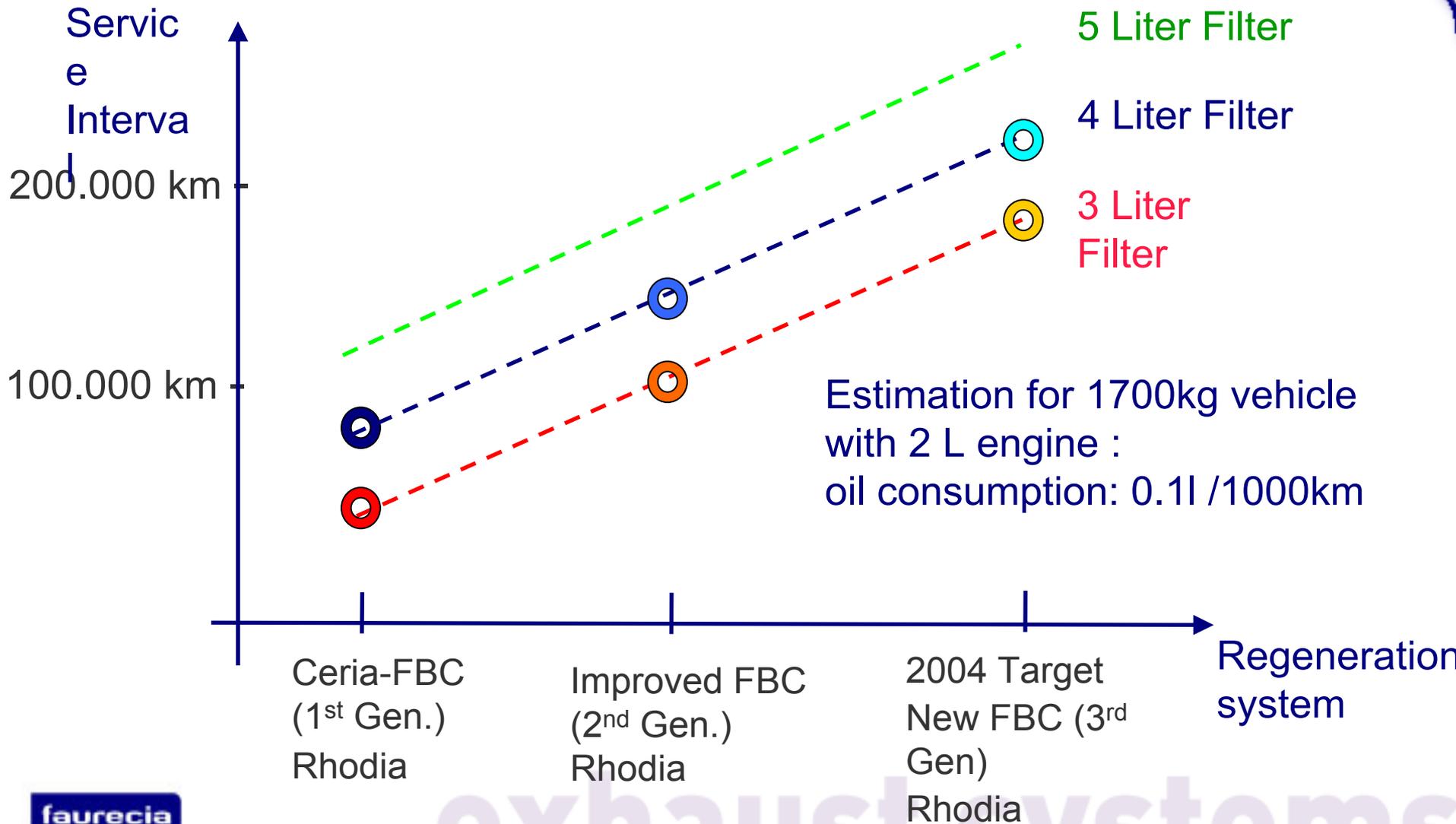
Areas for development :

- Ageing of the oxidation catalyst due to high temperature ?
- Thermal gradient of the SiC to reach a complete regeneration ?
- Durability ?

Example of temperature repartition (Dynamic)



DPF with FBC Service interval of 120 000 km have been reached thanks to Rhodia Eolys™ fuel-borne catalyst



faurecia

>Mechanics & Environment



The 1st Automated Diesel Particulate Filter
Remanufacturing service in the World

faurecia

exhaust systems

Faurecia & PSA Peugeot Citroën Partnership

Remanufactured DPF



M&E Site



607



OESOEM



R&D Bavans



Beaulieu Site



M&E core collecting



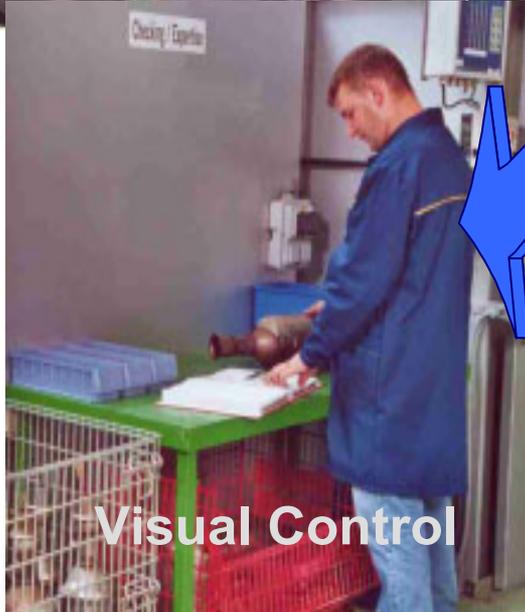
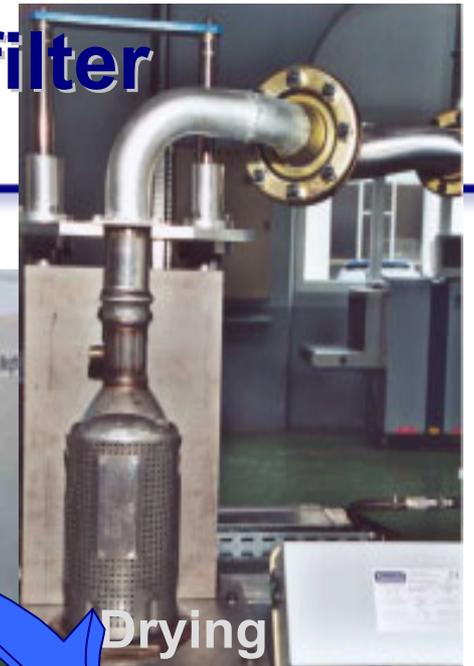
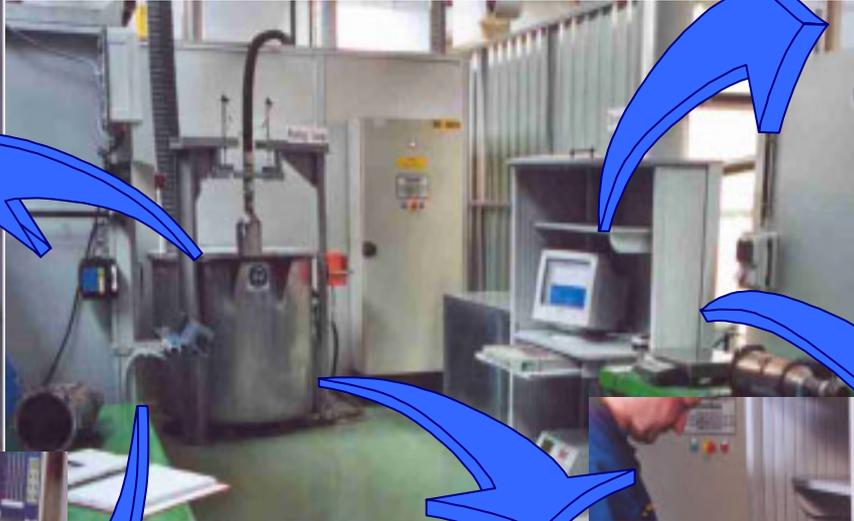
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faurecia

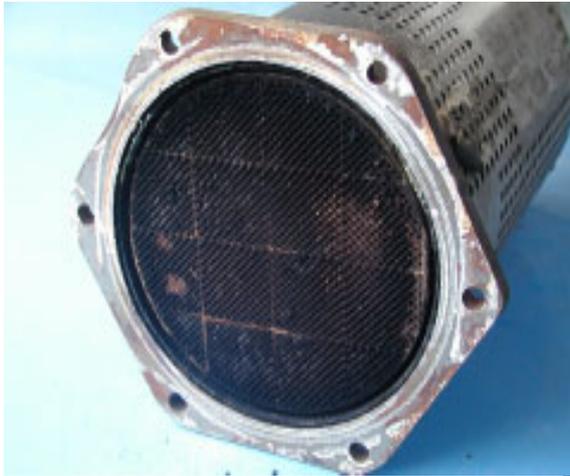
Confidential property of Faurecia

exhaust systems

Cleaning process for Particulate filter



Remanufacturing Steps – Inlet Aspect



DPF
80 000km



DPF after
cleaning



DPF after
drying

The Remanufactured DPF



- As good as a new part
- 30 to 50% less expensive than a new DPF
- Environmental friendly product and packaging

DPF Remanufacturing site – Industrialization – 2003



DPF Remanufacturing module
Capacity 250 units per day



Regeneration

Today water treatment capacity 1,000 DPF per day

DPF Remanufacturing – Conclusion

- The 1st and the only automated remanufacturing process working in the world.
- A flexible process, adapted to all DPF types based on SiC substrate & Rhodia additives.
- A safe & efficient process - more than 2,000 DPF already remanufactured and Zero warranty problem